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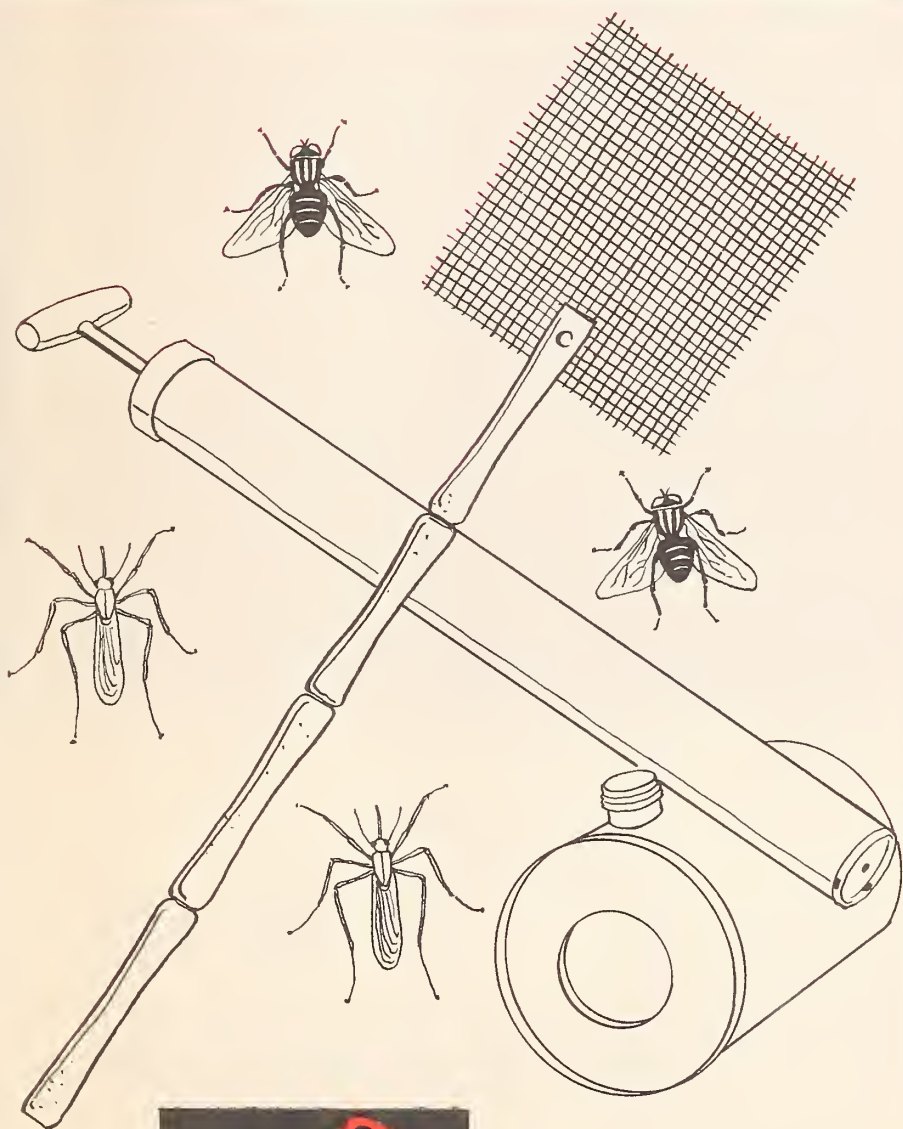
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GET RID OF HOUSEHOLD PESTS



**AN AID
TO EXTENSION
AND VILLAGE
WORKERS
IN MANY
COUNTRIES**



Federal Extension Service—United States Department of Agriculture, in cooperation with Agency for International Development, U. S. Department of State.

This is for

YOU

The Home Economics Extension Worker

or

Village Worker

The information in this booklet is based on experiences of extension workers and health workers in many countries. You'll find ideas to help you teach families how to get rid of some household pests. It was not possible to include all household pests found in each country in this small publication. Ask the sanitarian of your health department or other officials to help you.

Use this material in any way best suited to your needs.

BY KATHRYNE SHEEHAN HUGHES

Appreciation is expressed for assistance from: health, sanitation, home economics and information personnel of the Agency for International Development; specialists in the Federal Extension Service, and staff members of other agencies.

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Spraying dwelling with DDT to protect occupants against malaria -- Cambodia.

GET RID OF HOUSEHOLD PESTS

No one likes flies, cockroaches, scorpions, mosquitoes, ants, rats, mice, or other household pests around the home.

These insects and rodents may carry disease germs that will make your family sick.

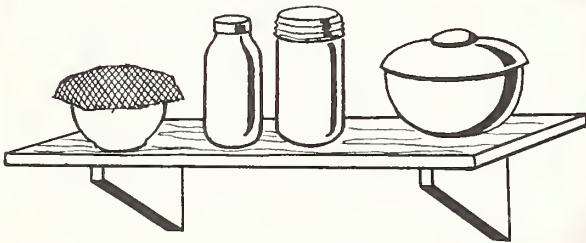
These dangerous pests live and breed in dark, dirty, and damp places. They like places where garbage, trash, and filth pile up.

You can help get rid of insects and rodents by keeping your house and surroundings clean and dry and by using insecticides.

INSIDE THE HOUSE

Clean your house carefully at least once a week. Clean all parts of the house--don't forget the corners, shelves, cupboards and closets.

Air your bedding and mattresses in the sun often. Insects hide in dirty beds and bedding. Wash blankets, quilts and sheets often. When possible hang them in the sun to dry.



Keep food in tightly covered containers. If possible, store containers of food in cupboards, on shelves or in a refrigerator.

Clean shelves often where food is stored. Remove all packages and containers of food. Scrub the shelves with soap and water.

Inspect all packages of food for insects. Foods such as flour, meal, cereal, dried fruits and vegetables may have insects. Look at these foods often to see if they are infested.

If you find insects you may need to use an insecticide.

Don't leave greasy dishes, or pans in the kitchen. These will attract pests. Try to wash these containers soon after using.

If you have fruit or vegetable peelings or other waste food scraps, feed them to chickens or pigs immediately or keep them in a tightly covered garbage can. When you empty the can, bury or burn the garbage.

Get rid of trash. Burn or bury it.

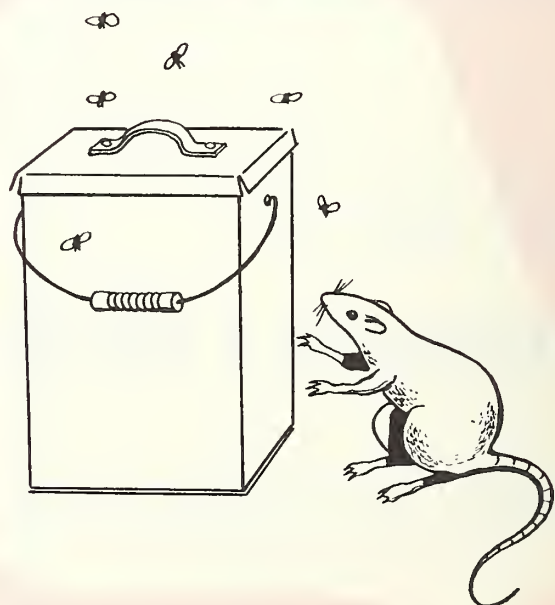
Some people screen windows and doors to keep out mosquitoes and other insects. In a humid climate use screens made of rust resisting metals. Sometimes a woven material such as mosquito netting is used.

Don't leave a wet mop around, since insects like dark, moist places. If possible, wash and dry it out of doors before storing in a closet.

Tack pieces of tin or wood, or use clay, to close small openings in the floor or wall. This helps keep pests out of the house. Rats and mice will not be able to get in.

Keep all animals out of the house.

A covered garbage can keeps out flies, rats and other animals.



OUTSIDE THE HOUSE

Keep your yard and surroundings clean and dry.

Get rid of tin cans, dishes, coconut shells, or anything that can collect water. Don't let garbage or trash pile up in the yard. Burn or bury trash.

Have good drainage around the house and yard.

Fill any small pools of water with earth.

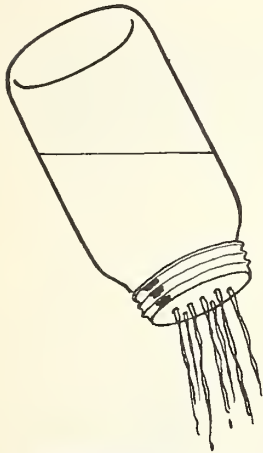
Pour a little kerosene on larger pools of water around the house or spray these pools with insecticides. Do not treat water that is to be used for drinking water for humans, animals, or poultry.

Have a well-built sanitary latrine and use it. Keep the cover of the latrine hole closed.

INSECTICIDES

USE INSECTICIDES WITH CARE. THEY ARE POISONOUS TO PEOPLE AND ANIMALS. KEEP THEM OUT OF REACH OF CHILDREN.

In all parts of the world insecticides are used to help control household pests. They come in the form of sprays, dust or bombs. An insecticide is a chemical used to destroy insects.



You can buy good insecticide sprayers for very little money. Or you can make a sprinkler by punching tiny holes in the lid of a glass jar. Put the insecticide solution in the jar and sprinkle it over the area to destroy adult insects and stop growth of young ones.

Wash any spray or solution off your skin immediately with soap and water. If you spill any on your clothing, change it immediately. After using insecticides, wash your hands. Avoid breathing insecticide dust or mist. If you tie a cloth over your nose and mouth when using the sprayer or sprinkler you will not breathe the poisonous fumes.

Do not spray oil solutions near an open flame.

Be sure dishes, pots and pans and other cooking utensils are covered when you spray. If they are not covered, wash them thoroughly with plenty of soap before using them.

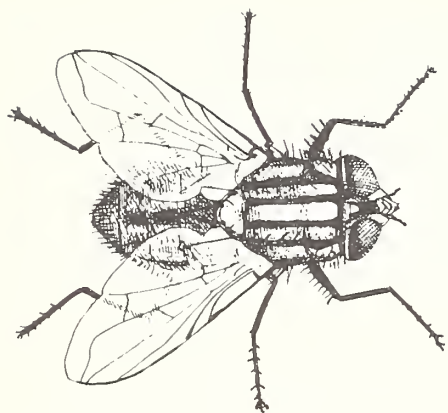
Foods, drinking water, and beverages should be in tightly covered containers when you spray.

Ask your health department sanitarian or other health officials to tell you:

- what kind of insecticide to use
- where to get it
- how to use it.

These people have special training on how to control household pests. They want to help you.

FLIES



This drawing has been greatly enlarged to show what a fly looks like.

HOW FLIES GROW

To help control flies you need to know:

- what harm they can do
- how they grow
- where they come from
- how to control them.

The house fly has four stages of life.

The life cycle may take from a week to several months.

Temperature, moisture and available food affect the cycle.

The female housefly lays her eggs on:

- manure
- human excreta
- rotting food.

WHY FLIES ARE HARMFUL

The fly might look harmless but it is dangerous. It carries disease germs on its hairy body and legs and in its stomach.

The fly picks up germs from waste materials like garbage, manure, and human excreta. The fly also likes to sit on sores of men and animals.

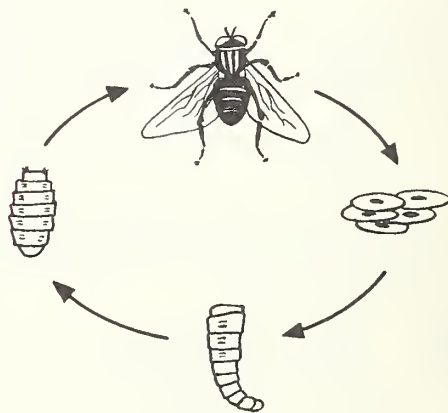
It leaves disease germs wherever it goes:

- on food in the market
- on food in your home
- on you and your children.

The germs left by the fly can make you and your family sick with typhoid, dysentery and other diseases.

Be sure to keep flies off of your baby. He cannot shoo them away. Use a mosquito netting to protect him.

The eggs hatch into tiny maggots which feed on these materials. The maggots grow into inactive forms called pupae. The pupae turn into adult flies. The cycle starts all over again.



Life cycle of the fly.

WHERE FLIES COME FROM

Flies live on almost any decaying matter. They feed on garbage, manure and human wastes. They come into your home and yard.

Animals attract flies. Try to keep animals and flies out of your house. Keep animals in a pen or pasture.

Your community should work with other communities to control flies. Flies can travel as far as 20 miles from their place of origin.

TO CONTROL HOUSE FLIES

Cleanliness is important in controlling flies. Keep your house, yard, and other buildings clean. Destroy fly breeding places. It is important to properly dispose of animal wastes (and dead animals), human excreta, trash, and garbage.



If you burn or bury trash, you can destroy breeding places of flies.

If animal manure is to be used as garden fertilizer, spread it in a thin layer to dry out. That way flies will not find it a good place to lay eggs.

Do not let garbage pile up in the house or yard. Put it in a garbage container with a tight fitting lid. To dispose of garbage, feed it to animals, bury or burn it.

Some people use screens to help keep flies out of their house. They screen windows and doors of their home.

Insecticides are used to destroy flies quickly. Use an insecticide in a spray.

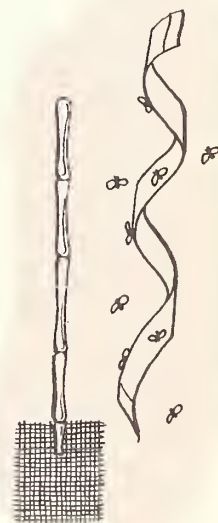
There are many kinds of insecticides used for controlling house flies.

Fly paper and fly swatters help to destroy flies also. Both of these may be made in the home.

To make sticky fly paper use:

5 parts castor oil
8 parts powdered rosin

Heat these two ingredients until the rosin is dissolved. They should not be boiled.



The material, once prepared, can be stored indefinitely in cans or jars. Always heat it before using so it is hot when applied. Spread this mixture in a thin coat on paper.

Newspapers could be used. Or spread it on large dried leaves. Other oils and plant rosins should work if castor oil and rosin are not available.

Hanging cut paper or leaves on doors helps too. Any breeze will move the paper and leaves. Flies avoid anything moving.

MOSQUITOES



This drawing has been greatly enlarged to show what a mosquito looks like.

There are different kinds of mosquitoes. Some mosquitoes put disease germs such as malaria and yellow fever into your body. Others carry filariasis.

Only one kind of mosquito can give you malaria. It is called ANOPHELES. They are usually found in damp, warm climates. Usually they come out at night and bite you.

Mosquitoes lay their eggs in water or in damp places near water. The larvae and pupae live in water. Pupae usually grow into adults in about 2 days. In another day or two the female adults are ready to bite. Male mosquitoes do not bite.

TO CONTROL MOSQUITOES

If mosquitoes are a problem where you live, get rid of their breeding places.

Do not leave empty tins or bottles, coconut shells, or other trash that holds water, near the house.

Bury old tins or bottles deep in the ground.

Fill in tree holes with concrete if you have it. If not, use any local material that will close the holes tightly.

See that rain barrels, tubs or any containers used to hold water are covered tightly.

Keep weeds and shrubs away from the house. This will eliminate daytime resting places for mosquitoes.

Drain or fill in all small puddles which have stagnant water. Earth or gravel may be used.

Put a little oil or kerosene on small puddles of stagnant water when you cannot drain them. Rain will wash away kerosene so you will have to put kerosene on the water often.

For larger bodies of water that cannot be covered with dirt or drained, spray the top with an insecticide.

If you have pans for watering chickens, empty and wash them once a week.

If you have flowers in containers of water change the water every day. Mosquitoes can lay their eggs in this water.

Screen your windows and doors with metal screening, mosquito netting or other available material.

Everyone in the community should take these precautions. You and your neighbors can work together to get rid of mosquitoes. Adult mosquitoes may come from neighboring places.

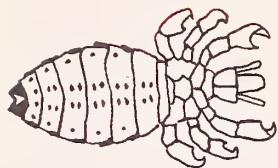
If your government provides a sprayman, he can help you.

Ask him to advise you on how to get rid of mosquitoes and how to protect yourself and your family from the diseases carried by mosquitoes.

Health department worker in Lebanon sprays inside a house to prevent mosquitoes. →



LICE



This drawing has been greatly enlarged to show what a louse looks like.

There are three kinds of lice:

- the body louse
- the head louse
- the crab louse

THE BODY LOUSE can carry disease germs. It lives in clothing. Washing your clothes in boiling hot water destroys lice.

HEAD LICE live in hair.

You can feel them because they bite you to drink your blood. This makes the place itchy. You are always scratching your hair.

You can see the lice eggs stuck onto your hair. They are very small white lumps.

Short hair is easier to keep clean. Comb and brush your hair every day.

Everyone should have his own comb and brush. If this is not possible, always wash the comb and brush before using.

Public health nurse in Liberia instructs school teacher on how to establish school health inspection program.

Wash your hair with soap and water often to help avoid lice.

A powder mix containing DDT or other insecticides such as lindane, or pyrethrum are used to get rid of head lice. Ask your local sanitarian about amount to use.

If DDT powder is used put it into the hair with a mechanical duster or a shaker type container.

The powder should not be washed out for 10 days. DDT does not affect the eggs. If left in the hair, the powder will destroy young lice as they hatch from the eggs.

Some people wash their hair the day after treatment to get rid of the lice which have been destroyed. Then 8 or 10 days later, they dust the hair again with the DDT powder just after the eggs which remained have hatched out.

Sometimes kerosene is used to get rid of head lice. If you use kerosene, use it sparingly to avoid burning the skin. Then wash your hair with soap and water.

Two or more treatments with kerosene are needed to get rid of the new lice that come when the eggs hatch.

Kerosene is not as effective as DDT. It is not recommended if DDT is available.

CRAB LICE live on the hairs of the body rather than clothing.

Crab lice can be controlled with two treatments of powder containing DDT or other insecticides such as lindane or malathion.

Give the second treatment 8 to 10 days after the first treatment to get rid of the newly hatched lice.

All hairy portions of the body--like the arm pits and legs and the privates should be dusted with the powder.

Rub the powder in with the fingers.

Do not bathe for 24 hours after applying the DDT.



ANTS

Ants are found everywhere--in the yard, in the kitchen, on fruit trees, and in walls.

They are not always a problem. Some kinds may destroy household pests. But sometimes they go after our food.

TO CONTROL ANTS

Locate their nests and destroy them by pouring used engine oil, ashes, or boiling water into the nests. Prune the shrubs around the house so that the leaves do not come in contact with the building.

To prevent ants from entering the house use an insecticide spray. Use this spray on the outside walls, from the ground up to the windows.

If there is open space underneath the house put the insecticide on the under side of the structure. Be sure to treat all posts. Using



This drawing has been greatly enlarged to show what an ant looks like.



an insecticide on the outside of the house every two months should control ants.

Ants come into the house through cracks and openings. Put the spray in these places.

This will help to control ants before they have an opportunity to get to tables or onto foods. Be careful to avoid putting insecticide where it can get into food.

Once a month is often enough to treat the same surfaces. If you continue to have ants treat surfaces that you may have missed.

Keep food in tightly covered containers. Place the legs of tables and food storage cabinets in containers of water with a film of oil.



FLEAS

Fleas attack both people and animals. They are found on dogs, cats, fowl, and pigs. They are also found on pests like rats and mice.



This drawing has been greatly enlarged to show what a flea looks like.

TO CONTROL FLEAS

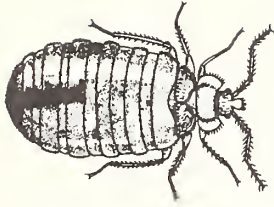
In rainy season fleas come into the house. If fleas are in your house, spray or dust with an insecticide.

Use insecticides such as DDT, malathion or pyrethrum dust. Apply the powder on the floors in cracks where the fleas breed.

Keep your house and surroundings clean. Fleas live in dust and dirt.

Cat and dog fleas may be destroyed with soap and water. Wash the pet with a soap that contains tar or creosote. An insecticide such as pyrethrum dust or four or five percent malathion dust can be used on pets.

BEDBUGS



This drawing has been greatly enlarged to show what a bedbug looks like.

TO CONTROL BED BUGS

Bed bugs are small flat bugs that bite us to drink our blood. They leave itchy lumps on the skin. The itchy lump has a red center.

They come out at night to bite us while we sleep. During the day these insects hide in:

- crevices in walls, floors, beds, sleeping mats and other furniture
- corners of pillows and in mosquito nets.

The bed bugs have a disagreeable odor and leave stains on bed sheets.

Bed bugs are brought into houses in dirty sleeping mats and clothes.

Keep your house clean.

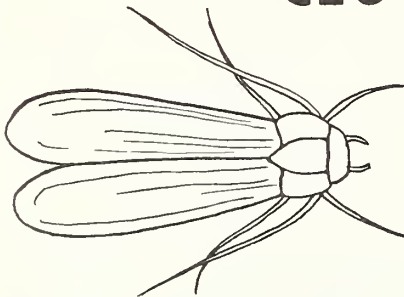
Air and brush your bedding--sleeping mats and blankets--out in the sunlight every day.

Bed bugs dislike kerosene. Brush it along cracks of baseboards and floor. The kerosene odor will disappear.

Boiling water can be poured into bed slats and cracks to destroy bed bugs.

Find the places where bed bugs hide in the daytime. Use an insecticide such as lindane or malathion emulsions. DDT may be used but in some areas bed bugs are resistant to it. There may be other effective insecticides available.

CLOTHES MOTHS



This drawing has been greatly enlarged to show what a clothes moth looks like.

Moths will eat holes in woolen materials, silks, furs, feathers, rugs or upholstery.

The worm which develops from the moth egg does the damage. Keep moths from depositing eggs.

TO CONTROL CLOTHES MOTHS

Keep closets clean.

Put woolen materials, rugs, clothing, in the sun and air. Carefully beat and brush to remove moth eggs. Spray with five percent DDT in kerosene or other available insecticides before packing and storing.

Pack tightly in clean boxes, bags of cotton, linen or strong paper. Be sure there are no openings so moths can get in.

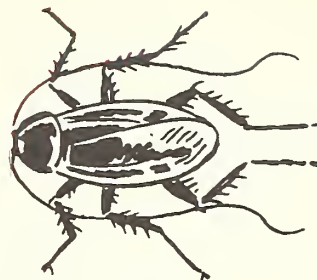
COCKROACHES

Cockroaches like moist warm places.

They are attracted to food and are also found among books, clothes, dishes, etc.

They carry dirt and give an unpleasant odor to cupboards, pantries and closets.

During the day, they stay in dark corners and under trash. At night they come out.



This drawing has been greatly enlarged to show what a cockroach looks like.

TO CONTROL COCKROACHES

Keep everything clean.

Cockroaches develop in large numbers around dirt and filth. Thorough cleaning helps to avoid cockroaches.

Destroy cockroaches with insecticide sprays, bombs, or dusts. Insecticides such as pyrethrum, DDT, chlordane, dieldrin, and lindane have been used in different areas of the world.

Insecticides to kill cockroaches may also be painted on surfaces with a brush or a cloth tied to a stick.

ITCH MITES

Scabies is the name for little itchy lumps in the skin caused by itch mites.

The lumps may come in the soft parts of the skin--between the fingers, inside the wrists and between the legs.

When you scratch these lumps, they turn into sores. The sores become infected and grow bigger.

Put on clean clothes after treatment or the mites will come back.

You must repeat the treatment in about a week. The second treatment will kill the mites that have come out of the eggs.

The itch mites also stay in clothing. They stay in blankets and sleeping mats.

Wash your clothes with soap and water or boil them.

Put your bedding and sleeping mats out to air in the sunlight every day.

Lice and itch mites come to us from other people through intimate contact.

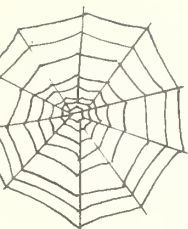
Do not use other people's blankets or sleeping mats.

Keep yourself, your clothes, and other personal belongings clean.

TO CONTROL ITCH MITES

The itch mite which makes the sores digs a little tunnel under skin to lay its eggs. The mites are so small you cannot see them.

- Wash the body with soap and water
- Dry the body carefully
- Use treatment your doctor recommends.



SPIDERS

Several kinds of spiders get into houses. They build webs in corners, on furniture and other places. These webs collect dust and dirt.

Some spiders are dangerous. They can bite you and make you sick. You may know which spiders are dangerous in your area. Spider bites have killed people.

Some spiders are beneficial because they feed on flies and other household insect pests. Many kinds of spiders will not bite you.

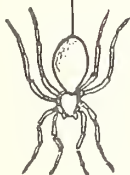
TO CONTROL SPIDERS

Inside the house brush down the webs. Destroy the white egg cocoons. If you do not destroy the cocoons, they will produce large numbers of small spiders.

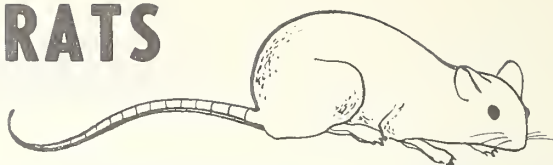
Use insecticides such as pyrethrum, chlordane, malathion, or lindane sprays in corners, underneath furniture, under steps or any place you find webs.

Use caution when spraying in enclosed spaces. Some spiders, agitated by the spray, have been known to drop onto the person doing the spraying and bite.

Outside the house, remove piles of wood, loose brick, tile or trash from the yard. This is where spiders may live. Use insecticides out-of-doors also.



RATS



AND MICE

Rats and mice are attracted to food. They eat stored grains, such as rice and corn.

Rats build their nests in trash, in store-rooms and places where they are not easily disturbed.

Rats and mice can carry disease germs. These germs can make you sick.

TO CONTROL RATS AND MICE

Keep all food and stored grains in tight containers or closed cupboards.

Do not leave food scraps around.

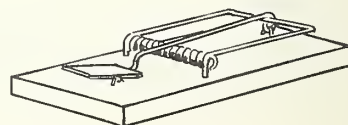
Do not leave garbage around--

- use the garbage for food for animals
- put it on a compost pile
- burn it or bury it.

You can trap rats and mice. Place traps so that pets are not hurt.

Poisons can be used but they are dangerous.

Rats and mice move from one home to another. Everyone in the community must work together to get rid of these household pests.



DEMONSTRATIONS

Show how:

- insects grow and explain why they are pests
- rodents grow and explain why they are pests
- to make a fly swatter
- to make fly paper
- to make a homemade hand sprayer
- to patch holes in walls with tin or wood
- to get rid of garbage and trash.

Ask the sanitarian from your health department how to use insecticides.



Visual aids make teaching easier.

Suggestions to Help You Give a Good Demonstration

Select a topic within your program which the women have helped to plan.

Prepare yourself carefully.

Know more about the subject than you plan to teach.

Outline the demonstration step by step and write down exactly what you will say at each step.

Practice your demonstration until you can do every step without hesitation.

Use only equipment and materials available to the families concerned.

Arrive at your meeting place ahead of the women and arrange all materials for your demonstration neatly and in the order you will use them.

Plan for your audience to be seated so that everyone can see and hear easily.

Use visual aids in your demonstration if they will help to make your presentation clearer.

Ask one of the women to assist you. This helps develop leadership.

Evaluate your own demonstration:

- (1) Did the women learn how to do what you demonstrated?
- (2) What evidence was given that the women plan to carry out this practice in their homes?
- (3) How could this demonstration be improved?

REMEMBER...

Insects and rodents
may carry disease germs.

To control these pests,
you should ...



Demonstrating a treatment for head lice.

- keep your home and surroundings clean.
- keep all food in covered containers.
- keep garbage in a covered container.
- feed garbage to animals or burn or bury it.
- destroy breeding places of insects and other pests.
- burn or bury trash.
- use a sanitary latrine.
- ask government officials about the use of insecticides.

BOOKS TO HELP YOU

- A First Hygiene Book by Shelia Jamison, Produced in association with South Pacific Commission Literature Bureau, New Hebrides.
- Fleas - How to Control Them, Leaflet No. 392, USDA, Washington 25, D. C.
- Home Making Around the World, Agency for International Development, Washington, D. C.
- The House Fly, Leaflet No. 390, USDA, Washington 25, D. C.
- Controlling Mosquitoes In Your Home and On Your Premises, Home and Garden Bulletin No. 84, USDA, Washington 25, D. C.
- Insecticides and Human Health by A. W. A. Brown, Professor of Zoology, University of Western Ontario, London, Canada. Published in the World Health Review of Pest Control, Autumn 1962, Part 3.